EFFECT OF A BREAK-THE-MOLD SCHOOL PROGRAM ON STUDENT ACHIEVEMENT IN ONE CENTRAL FLORIDA SCHOOL DISTRICT

By

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This dissertation is dedicated to my husband, Wendell, and to my daughter, Merebeth, who have been patiently awaiting my graduation. During our courtship, Wendell never complained about my Friday night and Saturday morning classes. It did not bother him when we had to rearrange our wedding plans to fit my class schedule. Merebeth waited to be born the semester after my course work was finished and cheerfully spent time with her grandparents so mommy could finish her dissertation. I could never have completed this program without such a loving, caring, and helpful family. I love you both more than you could imagine.

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TABLE OF CONTENTS

page

ACKNOWLEDGMENTS iii

ABSTRACT vii

CHAPTERS

1 INTRODUCTION 1

- Rationale 2
- Statement of the Problem 4
- Research Questions 4
- Assumptions 5
- Definitions 6
- Delimitations 6
- Limitations 7
- Summary 8

2 LITERATURE REVIEW 9

- Time vs. Learning 9
  - Comparisons of U.S. Students with Japanese and Taiwanese Students. . 10
  - The Matthew Effect 12
  - Extending Learning Time 13
  - Correlation Between Time and Learning 18
- Change and Staff Development 19
  - Focus of Staff Development 20
  - Teacher Collaboration 22
  - Making Lasting Change 25
  - Qualities of Effective Staff Development 27
- Parent Involvement 29
  - Interaction Between Home and School 29
  - Parent Training 31
  - Partnerships 32
- School Culture 33
  - Job Satisfaction 34
  - Teacher Demographic Factors 35

Extrinsic Factors 36
Intrinsic Factors 38
Job Dissatisfaction 40
Summary 42

3 METHODOLOGY 44

Introduction 44
Research Questions 44
The Break-the-Mold Intervention 45
Description of Schools 46
Participants 48
Study Design 49
Instrumentation 51
Data Collection 52
Data Analysis 53
Summary 54

4 RESULTS AND ANALYSIS OF DATA 55

Research Questions 57
Results for CTBS/4 Reading 58
Results for CTBS/4 Mathematics 61
Information and Observations from Break-the-Mold Schools 63
School A 63
School B 64
Comparison of School A with School B 65
Summary 65

5 SUMMARY, DISCUSSION, AND RECOMMENDATIONS 67

Overview 67
Empirical Basis for the Break-the-Mold Program 68
Program Description 68
Implementation Limitations 69
Summary of Results 70
Discussion 71
Recommendations for Future Research 73

APPENDICES

A SCHOOL-HOME COMMITMENT 75

B TABLES COMPARING SCHOOLS 77

REFERENCES 82

BIOGRAPHICAL SKETCH 90

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The purpose of this study was to determine whether there was a significant difference in academic achievement between students who attended a school implementing the Break-the-Mold Program and students who did not. The Break-the-Mold Program consisted of extending the school year to 195 days, providing effective teacher inservice training so time would be used more efficiently, and requiring parents to sign a contract about their involvement with their children's school life.

Participants were 213 students attending four different schools who were preselected by a small county in central Florida. The Break-the-Mold Program was introduced in two of the schools. The Comprehensive Test of Basic Skills, Fourth Edition (CTBS/4) was used to measure academic achievement. A factorial analysis of covariance was used to test for differences in student achievement in the intervention and control groups. Both a full and a reduced linear model of effects of treatment and demographic variables were to test for significant interactions and main effects on reading and mathematics achievement.

The results showed a significant interaction for treatment with socioeconomic status on reading when the dependent variable was the CTBS/4 reading scores. Tukey's pair-wise analysis showed that this difference was the result of a difference for the reduced price lunch students between those in the control and the experimental groups. The least squared means showed that reduced-price lunch students in the control group did better than those students in the experimental group. No significant differences and no interactions were found between the control and experimental groups on mathematics achievement when the dependent variable was the CTBS/4 mathematics scores.

CHAPTER 1
INTRODUCTION

In 1983, *A Nation at Risk*, called for reforms to the way the American education system dealt with time, content, and expectations. Since then, American education has undergone much change. Expectations and content standards were changed dramatically; however, learning still remained a prisoner of time (National Education Commission, 1994). Instructional time and time-on-task for students have been recognized throughout the educational literature as important topics of study. Although much has been written about how other countries have benefited from having longer school years and days, it has not been the practice to implement such programs in the United States.

In 1994, the National Education Commission on Time and Learning reported five major flaws in assumptions made by American schools.

1. All students arrive at school ready to learn in the same way and at the same time.
2. When academic time is used for nonacademic purposes, it does not affect how much a student learns.
3. Despite the fact that there have been major reforms in the amount of knowledge a student must gain, if yesterday's calendar was good enough then, then it is good enough for today.
4. The transformation of schools can be made without allowing teachers time or tools to reform themselves and their work.

> 5. It is reasonable to think that students in America can compete with those in the world while learning for half as much time. (p. 8)

These assumptions continue to affect schools today.

In order to have effective change, researchers found that the amount of time spent in school as well as many other aspects of the education system needed to be addressed (Aronson, 1995; Iacocca, 1991; Karweit, 1985; Walberg, 1988; Walberg, Niemiec, & Fredrick, 1994). One such area was the retraining of teachers so that they would make more efficient and effective use of academic learning time in order to improve student achievement. Better planned staff development and improved staff development practices were necessary if retraining was to be long lasting and effective (Ellis, 1990; Joyce & Showers, 1996; McKay, 1992). Researchers also found that including teachers in decision making helped them to feel that they were a more important part of the system (Deal & Kennedy, 1982; Deal & Peterson, 1999; Ellis, 1994; Joyce, Murphy, Murphy & Showers, 1989; Senge, 1990). Such involvement improved the school culture because it raised teacher morale and raised student achievement (Rubin, 1994). Another aspect that needed to be addressed was the important role parents play in the educational system. Most of the concepts children need to know prior to entering school and during their school years are learned within the family (Seeley, 1982).

Rationale

The importance of instructional time and time on task for students has been recognized throughout the educational literature (e.g. Aronson, 1995; Iacocca, 1991; Karweit, 1985; Mann, 1972; Walberg, 1988; Walberg, Niemiec, & Fredrick, 1994).

Although much has been written about how other countries have benefited from having longer school years and days, the United States has not implemented such programs on a broad scale. Since the late 1980s, more and more school districts have redesigned the school day in an effort to try to find a better way of educating their children. Extending the number of days in the school year was one method investigated (Karweit 1985; Walberg, 1988; Walberg, Niemiec, & Fredrick, 1994).

Most programs that allowed extra time for student learning were used at schools that served lower-socioeconomic families. One such program was located in a small county in central Florida. In that school district, two schools serving lower-socioeconomic students implemented what the county called the Break-the-Mold Program. This occurred after the county studied the low standardized test scores of these two schools compared with other schools in the county. The county decided that allowing extra time for the students to learn the necessary material might improve their test scores. The two schools were placed on a 195 day school year instead of the traditional 180 day school year.

Staff development, school culture, and parent involvement also needed to be addressed when trying to make effective change in American education. The Break-the-Mold schools in this study also provided teachers with staff development activities on how to use time more effectively and on how to get parents more involved. Culture was addressed when the principals at these schools were allowed to hire teachers who shared a common vision. Parents or guardians were required to sign contracts for the number of times they would meet with their children's teachers so they would stay informed about their children's growth.

Statement of the Problem

The problem of this study was to determine whether students who attended a Break-the-Mold school and students who attended a traditional school differed in terms of achievement. All students from the two Break-the-Mold schools who were in second grade during the 1995-96 school year and remained at that school through their fourth grade year in the 1997-98 school year were part of the experimental group. The control group consisted of all students who were in second grade during the 1995-96 school year and remained at the same school through their fourth grade year in the 1997-98 school year at two schools similar to the Break-the-Mold schools (e.g., according to student achievement level, percent of students on free and reduced-price lunch, racial and ethnic makeup, teacher characteristics, administrative personnel characteristics, and the physical building of the school and its location).

The following research questions were used to study the effects of the Break-the-Mold schools' program on student achievement.

Research Questions

The following research questions were addressed in this study:

1. Was there a significant difference between the total reading CTBS/4 scores of the students attending the Break-the-Mold schools and those of the students attending the traditional schools after controlling for prior reading achievement level, gender, race, and socioeconomic status?

2. Was there a significant interaction effect of treatment with gender, race, or socioeconomic status on CTBS/4 reading scores after controlling for prior reading achievement level?
3. Was there a significant difference between the total mathematics CTBS/4 scores of the students attending the Break-the-Mold schools and those of the students attending the traditional schools after controlling for prior mathematics achievement level, gender, race, and socioeconomic status?
4. Was there a significant interaction effect of treatment with gender, race, or socioeconomic status on CTBS/4 mathematics scores after controlling for prior mathematics achievement level?

Assumptions

For the purpose of this research, the following assumptions were made:

1. The students in both the control group and the experimental group had teachers of similar teaching ability.
2. The students did their best work on both the second-grade and fourth-grade CTBS/4, and any intervening variables that might have occurred for students in one group could just as easily have occurred for students in the other group.
3. The teachers in the experimental group used the extra time provided during the school year on academic subjects.
4. The parents of the experimental group students fulfilled their family contracts with the school.

Definitions

The terms that appear in this dissertation are defined as follows:

Achievement was operationally defined by the student's score on the CTBS/4.

Break-the-Mold Schools were two schools in a small central Florida county that were chosen to implement a program that extended the school year from 180 to 195 days, retrained teachers on how to use time effectively, and tried to involve parents and students by having signed school contracts.

CTBS/4 refers to the Comprehensive Test of Basic Skills, Fourth Edition.

Engaged Time/Time on Task refers to time the student spent learning language arts, mathematics, science, or social studies during the school day with a teacher present.

Extended School Year/Extended Year is a school year that lasted longer than 180 days or that consisted of more than a six and one-half attendance hours of school per day.

Learning Time included the engaged time and also any time spent on academic studies without a teacher present.

School Culture refers to the pattern of beliefs, values, and practices that define the school and how it runs.

Traditional School Year/Traditional Year is a school year lasting 180 days with no more than six and one-half attendance hours of school per day.

Delimitations

Student achievement was measured only by the CTBS/4 scores, and no other assessment was used. Also, this study included only two schools in a small central Florida county. The findings, therefore, relate only to those two schools and could not necessarily be generalized to other schools in the county, state, or nation.

Limitations

One limitation of this study was the difference in how the teachers used the inservice training offered to them and the fact that some teachers were hired after the inservice training had been completed. If every teacher hired to work at a school in the experimental group had been exposed to the same inservice training, all teachers' teaching methods could have been affected.

A second limitation of this study was the fact that the administrative staff of both Break-the-Mold schools and one control group school changed during the study. This could have had an effect on the teachers' and students' morale and affected the schools' cultures, as new administrators' influence on the schools' cultures might differ from those of the previous administrators (Deal & Kennedy, 1982; Deal & Peterson, 1999; Joyce, Murphy, Murphy, & Showers, 1989; Schein, 1992). Deal and Peterson (1999) stated that schools that provide students with a strong positive culture help to ensure children achieve higher, have positive experiences in school, and have the best possible chance to be successful.

The public school system is an unpredictable environment, and changes such as those which occurred during this study are not unusual. Administrative turnover is a natural part of the public school environment. Thus, successful interventions must be able to withstand this type of unpredictable change. Programs need to be evaluated on a regular basis to see if they are effective in the context of the changing school environment.

Summary

This chapter gave a brief introduction to the history of the school year and how time has been used. The rationale, statement of the problem, research questions, assumptions, definitions, delimitations, and limitations were outlined. Chapter 2 is a review of the literature that discusses time and learning, teacher retraining and staff development, parent involvement, and school culture as they relate to student achievement. Chapter 3 is a description of the setting, participants, study design, instrumentation, data collection, and data analysis. Chapter 4 contains the results of the study, and Chapter 5 offers summary, discussion, and recommendations for further study.

CHAPTER 2
LITERATURE REVIEW

This review of the literature begins with a discussion of the history of the use of time in American education and the differences between student learning time in the U. S. system and student learning time in some other nations' schools. It continues by discussing various options for extending the amount of learning time offered to students. Other factors--staff development, parent involvement, and school culture--that have been found to have an effect on student achievement are then discussed.

Time vs. Learning

Traditionally, U.S. school-age students have attended school for about nine months each year. It has been argued that this arrangement is not necessarily best for student learning (Perry, 1991). Yet, in the United States, schools still cling to this outdated agrarian model. In fact, 44% of U.S. elementary schools still offer 180-day years. Twenty-two percent offer a school year having between 176 and 179 days, and 23% offer a school year shorter than 175 days. This leaves only 10% of U.S. schools offering a school year longer than 180 days.

The length of the U.S. school year is much shorter than that of most other industrialized countries (Cawelti & Adkinsson, 1985; Walberg, Niemiec, & Fredrick, 1994). In Russia, students attend school for 210 days (Iacocca, 1991). In England, students attend school 8 hours per day for an average of 220 days, and in Japan students attend school an average of 243 days per year (Committee on Education Florida House of Representatives, 1995).

As inadequate as the U.S. school year might sound, its length has increased dramatically since 1880. The average number of days schools were in session in 1880 was 130 days; in 1890, 135 days; in 1900, 144 days; in 1910, 158 days; in 1920, 162 days; and in 1925, 170 days (Mann,1972). Walberg (1988) stated, "the amount of time devoted to schooling in the U.S. has increased substantially during the twentieth century, but it is difficult to argue that the time allocated is yet sufficient" (p. 84).

U.S. students between the ages of 4 and 19 who attend traditional schools spend approximately 13% of their waking hours in school. This accounts for 8% of all of their time, matching the number of hours students spend watching television each day (Walberg, 1984b; Walberg, Niemiec, & Fredrick, 1994).

Because U.S. schools fall short when the number of days spent in school is compared with other countries, ways of increasing learning time in these schools have become important. This section will discuss comparisons of U.S. students with Japanese and Taiwanese students, the Matthew effect, extending learning time, and correlations between time and learning.

Comparisons of U.S. Students with Japanese and Taiwanese Students

Japanese students spend 59% more time in school than U.S. students. They also spend four to five times the amount of time outside of school studying and completing school work. These factors could explain why Japanese students achieve so much more than their U.S. counterparts (Aronson, 1995; Stigler & Stevenson, 1991; Walberg, Niemiec, & Fredrick, 1994).

A 1986 study by Stevenson, Lee, and Stinger (as cited in Walberg, 1988) showed that Japanese and Taiwanese students who had equal tested IQ's with U.S. students at the start of first grade far surpassed the U.S. students when tested at the end of fifth grade. This growth could be attributed to the fact that the Japanese and Taiwanese students spend more time studying and working on academics both inside and outside of school than U.S. students. The Japanese culture emphasizes a belief that success comes from hard work. This belief results in 96% of Japanese students graduating from high school. U.S. citizens tend to believe that ability rather than hard work determines a student's success (Walberg, 1988; Walberg, Niemiec, & Fredrick, 1994). Only 75% of U.S. high school students actually graduate (Walberg, 1988). Karweit (1985) argued that the different values held by people in countries other than the U.S. contribute greatly to their students' superior academic growth as measured by cross-nationally calibrated IQ tests. If a student spends enough time working and studying, the student can be successful.

Besides holding differing values, Japanese students also attend school 240 days each year, approximately 50 days more each year than do U.S. students. Both of these factors contribute to higher success rates in academic growth (Anderson, 1994; Karweit, 1985; Walberg, Niemiec, & Fredrick, 1994).

Walberg (1988) also found that many U.S. citizens believe that U.S. students are unable to withstand the psychological stress that would result from more rigorous and longer school days. He reported beliefs that lengthening the school year would cause stress, unhappiness, heart disease, or suicide.

It is highly unlikely lengthening the school year would cause any of these things. Much of this misunderstanding has come from the fact that many Americans believe the hard-working Japanese students often commit suicide because of their schooling stress. Realistically, however, Walberg (1988) reported that in 1984 Japanese students ages 10 through 19 had a suicide rate about half that of U.S. students in the same age group.

The Matthew Effect

One major problem associated with time and learning is the "Matthew effect." This term is derived from the Bible passage Matthew 25:29, "For everyone who has will be given more, and he will have an abundance. Whoever does not have, even what he has will be taken from him" (Hoerber, 1986). Average and above-average students are able to gain knowledge at a faster rate than below-average students. The gap between the two groups grows wider every year until there is no way for the below-average student to close the gap (Walberg, 1988).

The Matthew effect describes not only what happens to students during the school year, but what continues to happen during the summer months. Lower socioeconomic and at-risk students who do not attend summer school retain less knowledge than middle-class Caucasian students. Those students who attend summer school, regardless of the strength of the curriculum, retain the gains they had made during the school year and continue to improve their skills (Walberg, Niemiec, & Fredrick, 1994).

It is quite possible that because of summer academic setbacks the National Commission on Excellence in Education recommended the school year be lengthened to include up to 220 days and the length of the school day be extended to seven hours (Iacocca, 1991; Karweit, 1984). The tradition of the agrarian calendar makes changing the length of the school year or school day difficult (Schell & Penner, 1993). Murfreesboro, Tennessee, Superintendent John Hodge Jones (1994), one of the pioneers of extended day and year of the elementary schools, stated, "Strong and untiring leadership in breaking the agrarian time model is a must" (p. 20).

The idea of lengthening the school year and day is appealing to many. It has been discovered that, although many sporting activities show that as more and more practice is done the gains become smaller, this is not the case when it comes to academic growth. A person can improve memory and other academic skills at a constant rate with more time and practice allowed (Fredrick & Walberg, 1980; Walberg, 1988; Walberg, Niemiec, & Fredrick, 1994).

Walberg (1988) identified five factors that contribute to learning: prior achievement, development, motivation, the quality of instruction, and the quantity of instruction. Each of these factors is a necessary ingredient if the student is to learn. If the quality of instruction is poor or unsuitable for the child at hand, it will do no good to lengthen that child's school year with more of the same instruction. If even one factor is missing, the ability to learn is greatly diminished regardless of how many of the other qualities are present. Karweit (1984) agreed by commenting that extra time in school will help only if the lacking element is time.

Extending Learning Time

Additional time alone is not enough to increase productivity in education. Walberg, Niemiec, and Fredrick (1994) stated that increasing the available time spent in school will not necessarily help improve student performance unless that time is used productively. Quantity without quality results in little. This implies that schools should make better use of already available learning time before trying to lengthen the school year (Karweit, 1985, 1988; Lowe & Gervais, 1988; Walberg, Niemiec, & Fredrick, 1994). That available time must be used as learning time to be productive. If this occurs, the achievement gained would be proportional to the learning time spent. In fact, the advantage of increasing learning time is comparable to the advantage of superior instruction over mediocre instruction (Walberg, Niemiec, & Fredrick, 1994).

Before spending the funds necessary to extend the school year for students, U.S. schools would do better to improve the instruction offered, provide more teacher training, and work toward less waste of learning time. Aronson (1995) focused on the ideas of the National Education Commission on Time and Learning. This Commission suggested that the U.S. adopt a 5 ½-hour academic work day. This type of day would include only core academic classes. All electives (sports, home economics classes, vocational classes, physical education classes, and club meetings) would have to take place at a different time. The school day might be extended to accommodate such classes. The results would be quality time that is both effective and efficient (Aronson, 1995; Karweit, 1984, 1985, 1988; Lowe & Gervais, 1988; Walberg, 1988; Walberg, Niemiec, & Fredrick, 1994).

Although using allocated learning time more efficiently seems like it might help, those students around the world attending school 200-240 days a year have teachers who are also working to use their available learining time better. At this rate, it is illogical to think U.S. students could achieve more in fewer days (Anderson, 1994; Walberg, Niemiec, & Fredrick, 1994).

Wiley and Harnischfeger (as cited in Fredrick & Walberg, 1980) reported the following:

> . . . where students receive 24% more schooling, they will increase their average gain in reading comprehending by two-thirds and their gains in mathematics and verbal skills by more that one-third. These tremendous effects indicate that the

> amount of schooling a child receives is a highly relevant factor for his achievement. (p. 185)

With this in mind, there are many options to extend the amount of time students spend learning. These include beginning school earlier in life, adding to the length of the school day, adding to the length of the school year, and increasing the attendance rate, use of homework, and use of class time spent on task (Karweit, 1984; Walberg, Niemiec, & Fredrick, 1994). Walberg (1988) stated, "great accomplishments are contingent upon opportunity and continuous, concentrated effort over at least a decade" (p. 77).

Students who used to come to school unprepared are now given a chance to become prepared by starting school a year earlier than other more able students (Walberg, Niemiec, & Fredrick, 1994). This type of preschool program is usually called Headstart. Haskins (1989) and Salvin and Madden (1989) found that, although starting school earlier shows some early improvements in student achievement, those improvements were lost within three years. By the end of that third year, those students who had started school earlier and had shown some academic gains over those who had not started earlier no longer differed from their classmates, and all gains seemed to be lost. Although preschool programs have not provided significant effects in lasting achievement of students, they have been favored in legislation. This favoritism ignores the findings of scholarly research (Haskins, 1989).

Walberg, Niemiec, and Fredrick (1994) stated the biggest fear of lengthening the school day is that it would allow for even more time to be wasted. In fact, they concluded that if 94 minutes were added to a regular school day only 26 of those minutes would be used for instructional purposes. The other 68 minutes would be used for preparation time

(27 minutes), clerical duties (19 minutes), extracurricular time (14 minutes), and parent conferences (8 minutes).

Slavin and Madden (1989) reported on extension of the school day for kindergarten students. In the past, kindergarten students attended school for only half a day. The day was then extended to the same length as the older students in school. These authors concluded that full-day kindergarten, as opposed to half-day kindergarten, has no significant lasting effects. Yet, full-day kindergartens continue to exist throughout the U.S. today.

One of the least expensive and most controllable ways to extend learning time is in the assignment of homework. Walberg, Niemiec, and Fredrick (1994) found that having homework every night is far superior to having it assigned only sporadically. They also found that homework was most useful to the student when it was commented on or graded.

The amount of homework that would provide the maximum amount of academic benefit to the student increases with the grade level of the student (Walberg, Niemiec, & Fredrick; 1994). In first grade, students should receive an average of 17 minutes of homework each night. By the third grade, the appropriate amount of homework increases to an average of 28 minutes, and in fifth grade that amount should average 42 minutes every night. These amounts drastically increase during the middle and high school years. In fact, by high school it seems that there really is no set limit to the amount of homework that would benefit a student. The more they complete, the better their academic growth. The amount of homework recommended during the high school years is at least two hours each night. Walberg, Niemiec, and Fredrick found, however, that the average amount of homework done by U.S. students is only 4 to 5 hours per week.

Walberg, Niemiec, and Fredrick (1994) recommended that time-on-task must be increased, and that students should be immersed in their studies. To effectively use class time, the work provided for the students must be difficult but at the student's level. Also, instruction must be adapted to the student's needs. Instruction should include a wide variety of methods to provide adequate instruction for all. They have recommended direct teaching as well as styles that enable various learning modes. Classroom research by educational psychologists showed that two presentations given separately and spaced are almost twice as effective as the same information presented as one or two concentrated presentations and never presented again (Dempster, 1987, 1991; Walberg, 1988; Walberg, Niemiec, & Fredrick, 1994). Practice that is spread over several lessons mixed with other activities produces much better results than practice that is concentrated even if equal amounts of time are spent (Walberg, 1988; Walberg, Niemiec, & Fredrick, 1994).

The amount of time spent on learning activities differs from classroom to classroom; however, Karweit (1984) found that students spend only about half of their time in school getting instruction. This is not enough continuous exposure to academics. Poor student attendance, lack of classroom control, minimal competencies of instructors, and the actions of administrators that seem to minimize the importance of instruction also limit the amount of appropriate instruction a student receives. All of these factors affect the learning atmosphere and the priority placed on instruction.

Correlation Between Time and Learning

Many studies have been done to attempt to find a correlation between time and learning. Karweit (1984) noted that most of those studies use poorly chosen subjects and do not take into consideration factors other than extending the school year that might influence results. After completing eight studies of her own, Karweit stated, "The zero-order correlation between time and learning across these studies range from 0.10 to 0.70. When controls are introduced for prior knowledge or ability, the partial correlation becomes 0.09 to 0.60" (p. 33). Later, Karweit (1985) stated the correlation between time and achievement was between 0.25 and 0.58, and when ability was partialled out, it was between 0.09 and 0.43. Karweit (1984) reported she found, in general, a positive association between time and learning. The amount of engaged time provided the most significant effects; however, all of the studies she looked at showed inconsistencies.

Fredrick and Walberg (1980) and Walberg, Niemiec, and Fredrick (1994) agreed with Karweit's finding of the general positive association between time and learning. They stated that with other factors being equal, the increase of productive time would result in the amount learned being proportional to the time spent learning it. "With few exceptions the association of learning with time is one of the most consistent findings in educational research" (Walberg, Niemiec, & Fredrick, 1994, p. 99).

A 1995 report by the Committee on Education for the Florida House of Representatives, identified four different extended year programs in Florida. Pinellas County reported a 210 day year operating at Frontier Elementary. This program started in 1994 and was expected to last 6 years. Snively Elementary in Polk County changed their curriculum, and students attended school for 210 days during a 3-year time period. Prior to implementing the new program, only 22% of the second-grade students attending Snively Elementary scored at or above the 51st national percentile rank on a second-grade reading comprehension test. It was reported after only the first year that that percentage increased to 67% of the students scoring at or above the 51st national percentile rank. First-grade math concepts and applications scores saw a similar increase for students at Snively Elementary. Those scores went from 35% scoring at or above the 51st national percentile rank to 57% after the first year of program implementation. Despite these impressive academic gains, this program ended just prior to the 1995-96 school year and the school returned to a 180 day calendar. The last two programs were found in Orange County at Grand Avenue Elementary and Orange Center Elementary. Both of these programs run for 196 days; however, they had not existed long enough to report data.

Change and Staff Development

Change is a difficult, important, and necessary part of any organization's growth, but for lasting change to occur, a change in the organization's culture must take place (Deal & Kennedy, 1982; Deal & Peterson, 1999; Schein, 1989; Schein, 1992). Barker (1992) identifies a structural change in educational practices as a paradigm shift. In educational systems, staff developers can be instrumental in making sure the paradigm shift occurs when most appropriate (Gallegos, 1994). To redesign education, those responsible must first redesign teacher preparation and professional development (Darling-Hammond & McLaughlin, 1995).

Teachers need to be taught in their preparation not to think of "my classroom," "my students," "my subject." This is often the mind set of educators. Instead, teachers need to think of the school as a group of people working together to make a difference. That group should consist of all school personnel--teachers, counselors, administrators, parents, assistants, staff, students, and anyone else in contact with the school (Darling-Hammond & McLaughlin, 1995). Doud (1995) agreed that including others in important school decisions would help to increase the public's confidence in schools today.

Staff development should be built upon the specific beliefs, values, and commitments of those persons working to improve teaching. It must take into consideration the culture of the school if it is to provide successful change (Deal & Kennedy, 1982; Deal & Peterson, 1999; Ost & Ost, 1988). Changing the culture of a school is a process that takes time and resources. Justifying additional costs by emphasizing the impact these resources would have on education is essential (Deal & Kennedy, 1982; Deal & Peterson, 1999; Mohrman, Lawler, & Mohrman, 1992). The private sector has taught that to make real, lasting change, financial resources must be applied to the transformation process and not just to salaries of the people in control of the change process (Mohrman, Lawler, & Mohrman, 1992). This section will discuss the focus of staff development, collaboration, making lasting change, and qualities of effective staff development.

Focus of Staff Development

The focus of educational change during the 1990s has shifted from what is attempted to be learned to what is actually learned, and from the process used to the product produced (Finn, 1990; Gallegos, 1994). Gallegos (1994) stated, "Defining education in terms of what a student has learned is not a new concept and can be found in

Tyler's objectives, Spady's outcomes, Glaser's criterion-references measurement, and Bloom's mastery learning" (p. 35).

Since education for students has become results driven, it is only logical that staff development would also become results driven (Sparks, 1994). Sparks stated that results-driven staff development will be judged on whether it makes a lasting change in instructional behavior that benefits students. This is quite different from judging the success of professional development by participant reactions to a presentation and whether they felt that information could be useful in their work situation. Never did anyone follow up and see if it was actually successfully used by the participants.

Regardless of what it was called--inservice, staff development, professional development, or human resource development--the activities have always tended to be the exposure of teachers to the knowledge and ideas of outside experts. In such situations, teachers are more likely to act as passive receivers of knowledge. District professional development programs have promoted the use of outside experts. Although routine tasks can be accomplished through the use of such experts, more complex tasks require active teacher learning through collaborative decision making (Ellis 1992; Galbraith, 1973). Using the practical experience of teachers within the school district could be more useful to teachers (Lambert, 1998; Sparks, 1994). Darling-Hammond and McLaughlin (1995) stated that staff development that can help a teacher turn a vision into practice can not be prepackaged or come from the top down. Yet, such practices continue to be commonly used by schools.

Changing a teacher from direct teaching to a facilitator of problem solving takes time because there must be an accompanying change in the school culture (Lieberman, 1995). Lambert (1988) suggests at least 10 actions essential to the building of professional culture: restructured time within the school day and year; updated job descriptions; shared decision making; money for the teachers to use for experimentation; readily available information; collective bargaining that is non-confrontational; hiring, staffing, and work options; peer-/self-evaluation; teacher support from the secretarial staff; and flexible bus schedules so students can be sent home early on some days if time is needed for collaboration. Not everyone will be able to successfully make the transition demanded by a paradigm shift. For some it will be too painful to give up old ways and old values (Gallegos, 1994). However, with top-down support for bottom-up reform, the transition should be easier for all involved (Darling-Hammond & McLaughlin 1995).

Teacher Collaboration

Staff development has often operated upon a belief that teachers learn best through attending professional conferences, a series of workshops, or by working with consultants over a period of time. This is the opposite of the cooperative problem solving or collaboration which teachers are expected to utilize when helping students learn (Lieberman, 1995). Teachers spend most of their planning and preparation time talking about materials, discipline, and individual students rather than discussing teaching practices and sharing their ideas about how to teach more effectively (Lambert, 1988; Zahorik, 1987).

Because of the misuse of the little time teachers have to discuss practices, Darling-Hammond and McLaughlin (1995) suggested the time within the school day and week needs to be rearranged so teachers have a block of time to work and learn together. Planning time is essential for a teacher trying to implement innovation. If planning time is not set aside, it could limit a teacher's perceptions of what can and cannot be accomplished (Cuban, 1984; Ellis, 1992). This time should include the principal giving support to the teachers so they might become better leaders, and the teachers actually sharing ideas with each other as they work together to implement change at the school (Ellis, 1994).

Such teacher collaboration has shown benefits in many empirical research studies (Ellis, 1992; McLaughlin, 1990). When teachers work together, discuss problems, and are more involved in the decision-making process, the benefits include better problem solving which leads to greater effectiveness for the organization (Mohrman, Lawler, & Mohrman, 1992; Joyce & Showers, 1988). Increased non-structured time, and especially increased structured time with other teachers, decreased the sense of isolation and changed teachers' professional relationships so they were willing to discuss even sensitive subjects. The teachers also claimed to feel more responsible for helping other teachers to grow and learn (Ponticell, 1995).

Learning and organization theorists now teach that most people learn best when they are able to discuss what they have learned (Lieberman, 1995). "Most teachers need to rethink their own practice, to construct new classroom roles and expectations about student outcomes, and to teach in ways they have never taught before and probably never experienced as students" (Darling-Hammond & McLaughlin, 1995, p. 597). Giving teachers a chance to share ideas and discuss problems in small groups can result in better teaching, improved learning activities, higher student achievement, and better student attitudes. This, for obvious reasons, can be very rewarding for the teacher as well (Gallegos, 1994; Zahorik, 1987).

One popular approach to getting employees to offer their ideas is having them work in collaborative groups sometimes referred to as quality circles, coaching teams, or study teams (Joyce & Showers, 1996; Lawler, Ledford, & Mohrman, 1989; Mohrman, Lawler, & Mohrman, 1992). Work groups or teams help with job involvement by offering members new skills, knowledge, feedback, decisions, and rewards for their part in the group (Joyce, Murphy, Showers, & Murphy, 1989; Showers & Joyce, 1996). Senge (1990) referred to this process as team learning, during which team members learn to dialogue and gain shared vision, two processes necessary for a learning organization to evolve and change. Such work groups allow members to feel responsible for the group's performance (Cummings, 1978; Mohrman, Lawler, & Mohrman, 1992).

Collaboration with peers, students, and researchers is necessary for teachers to make sense of staff development ideas (Joyce & Showers, 1996; Sparks, 1994). “We need one another’s ideas for stimulation, and we need one another’s perspectives to enrich our own” (Joyce & Calhoun, 1995, p. 51). It helps to build reflective practices such as journal keeping so teachers can review their ideas and grow from their successes and failures.

When employees are totally involved in the change process they are able to care about the organization's performance because they know how the organization works, can influence the changes that take place, are rewarded for improvement, and have contributed to its success (Mohrman, Lawler, & Mohrman, 1992). By involving teachers in identifying, investigating, and posing solutions to problems, their content knowledge and analytical tools are expanded further than they would be if only lectures and direct teaching were used. Joyce (1991) stated that if current research findings are shared with teachers, they might use the new knowledge to define problems in their own school and seek out solutions. If teachers are expected or want to truly change the way they teach and work, they must have the opportunity to discuss, ponder, try, and perfect new practices (Joyce & Calhoun, 1995; Joyce, Murphy, Showers, & Murphy; Lieberman, 1995; Showers & Joyce, 1996).

Besides meeting within their own schools, it is important for teachers to meet and share ideas with persons outside the school. New structures need to be set up outside of school for collaborations with universities, other schools, neighborhood-based youth organizations, and activities at the district, regional, or state level (Darling-Hammond & McLaughlin, 1995). This would encourage teachers to get involved with others and to discover even more new and better ideas to try. This also gives the teacher the opportunity to become involved in research in other areas.

Making Lasting Change

For change to be effective, it must involve the teachers and administrators taking ownership of the change (Schein, 1992). One way for them to take ownership is for them to do active research rather than passive listening. Educators involved in action research become more flexible in their thinking because they are introduced to new ideas and different perspectives (Joyce, 1991; McKay, 1992). Working together to review research allows educators to focus and reflect on new ideas and decide how to begin to implement changes within their own schools (Joyce, Murphy, Showers, & Murphy, 1989; Showers & Joyce, 1996).

Those persons going into the profession of teaching could be better served if they practiced in professional development schools before joining the work force. Professional development schools are schools where student interns, experienced teachers working as university adjuncts, and researchers join together as colleagues and learners (Darling-Hammond & McLaughlin, 1995). Teachers involved in this type of setting as a researcher and teacher can better help their students and share their ideas with their peer teachers. This also can give great self-satisfaction to the teacher involved (McKay, 1992).

Besides providing teachers time to collaborate, there are other important factors to making lasting change. Ellis (1992) suggested that the goals of the school must be clearly stated. Before the goals can be stated, they must first be agreed upon by those teachers, administrators, and staff members who are affected by them. If nobody knows what goals they are trying to reach, they will not know when they have reached them and will soon get discouraged. When choosing goals it is important to focus on only one innovation at a time. If too many different innovations are introduced at once, it is likely that the teachers' focus will be diluted so that none of the innovations is properly implemented. Given the rapid and continuous changes in society, successful schools must provide staff development which focuses on teaching, curriculum, and technology (Joyce & Showers, 1996).

Although passive listening has caused problems with the effectiveness of staff development, fixing that alone will not solve the entire problem. Another serious flaw in staff development practices is a lack of follow-up on the part of the staff developer. A lack of sustained follow-up and reinforcement after staff development has taken place often results in low effectiveness of change. This occurs not because the change is difficult, but because it is unusual (Joyce & Showers, 1996; Matthews, 1993). Joyce & Showers (1996) discuss the importance of having a team of specialists who are able to offer both instruction and support to teachers. As some teachers become more comfortable with the new procedures, they could become mentors for other teachers. If teachers are asked to implement an innovation, they must be provided with systematic and sustained feedback (Ellis, 1990, 1992; Sparks, 1994).

Darling-Hammond and McLaughlin (1995) found that teacher evaluations need to change. A check-off list assumes that teachers are teaching for transmission of information and not for understanding. Senseless regurgitation of information is not what the thinkers and problem solvers of tomorrow need to be able to do. Students should not have to be passive learners any more than should teachers. By providing informative feedback to teachers on their performance after staff development sessions, the teachers are encouraged to practice what they have learned. In fact, for staff development to be effective, it must provide practice, feedback, and coaching (Lambert, 1988). These are the very parts of staff development that are usually lacking.

Qualities of Effective Staff Development

Effective staff development must have certain qualities. Researchers in teacher education have identified six such qualities.

1. There must be concrete tasks that engage the teachers in teaching, assessment, observation, and reflection (Darling-Hammond & McLaughlin, 1995; Ponticell, 1995; Sparks,1994).
2. Staff development must have participant driven inquiry, reflection, and experimentation (Darling-Hammond & McLaughlin, 1995; Joyce, 1991; Ponticell, 1995; Sparks,1994).
3. The teachers must have time to collaborate on their teaching practices so they can come up with even better ideas about how to help their students (Darling-

Hammond & McLaughlin, 1995; Joyce, Murphy, Showers, & Murphy, 1989; Lieberman, 1995; Showers & Joyce, 1996; Sparks,1994).

4. The design and evaluation of staff development should be a product of teachers' work with their students (Darling-Hammond & McLaughlin, 1995).
5. There must be ongoing development that uses modeling and coaching with direct feedback to the teacher (Darling-Hammond & McLaughlin, 1995; Joyce, 1996; Joyce, Murphy, Showers, & Murphy, 1989; Ponticell, 1995).
6. Teacher development must be connected to other changes going on in the school so teachers can see the common goal (Darling-Hammond & McLaughlin, 1995; Ellis, 1992).

As new policies are introduced to the field of education, they need to reflect "a learner-centered view of teaching and a career-long conception of teacher's learning" (Darling-Hammond & McLaughlin, 1995, p. 601). Lieberman (1995) stated, "The change from teaching to learning is significant because it implies that teacher development opportunities must become integral to the restructuring of schools" (p. 592). This is a continuously evolving process that will take much time and will never really be completed. Teaching for understanding requires not only time, but that teachers/leaders be able to understand the diverse perspectives of their individual participants (Darling-Hammond & McLaughlin, 1995).

Often when staff development encourages a paradigm shift in the role of a teacher, activities are added to the teachers role, but rarely are any activities taken away. This is perhaps the reason reformers are met with defensive reactions. Teachers' roles need to be redefined with not only additions, but with subtractions, too (Lambert, 1988). It is essential that teachers be given time to collaborate on new ideas so they can extend them and put them to use (Joyce, Murphy, Showers, & Murphy, 1989). There is no one right way to implement staff development to improve a school. Various methods can work together to get to the same ending point (Joyce, 1991). Staff development is an essential and critical process that schools cannot do without (Sparks, 1994).

Parent Involvement

The relationship between parents and schools has received increased attention as a factor in student achievement (Boyer, 1989; Moles,1982; Sui-Chu, 1996; Tracy, 1995; Walberg, 1984a). Parents control about 87% of a student's waking time prior to the age of 18 (Walberg, 1984a). That is far greater than the 13% of time spent at school. Nine out of 10 teachers surveyed by the Carnegie Foundation stated that a lack of parental involvement was a big problem (Boyer, 1989). The three areas discussed in this section are interaction between home and school, parent training, and partnerships.

Interaction Between Home and School

Researchers have shown that parents who are actively involved in their child's education by either volunteering at the school or by helping their child at home improve their child's academic achievement (Flood, 1993; Moles, 1982; Peterson, 1989; Tracy, 1995). Bassler, Brissie, and Hoover-Dempsey (1987), Henderson (1988), and Moles (1982), agreed that children's grades, standardized test scores, attitude, and behavior all improved with parent involvement. Moles (1982) went on to state that parent/school programs have also been known to reduce student absenteeism. Flood (1993) identified three ways to get parents involved with schools: parent-child relationships in the home, parent training, and parent/school/community partnerships.

Time parents spend working with students at home strongly influences the productivity of the time students spend at school (Walberg, 1984a). Davies (1991) agreed that parents must play a major role in all aspects of school life, particularly as resource people and decision makers. Many parents who worked during the school day found it difficult to participate in activities in the classroom; however, Moles (1982) found that working mothers helped with school work and student learning as much as unemployed mothers.

Bittle (1975) and Chapman and Heward (1982) each concluded from their studies that an effective way to get more parents involved in helping their children was to offer recorded telephone messages from the teacher to the parents so the parents could call and find out what to help their child with for homework that night. In the studies, more parents tended to call the answering service to find out how to help, and the students' achievement tended to go up. The importance of the family can not be overlooked, as most of the things a child needs to know, both before and during school years, are learned in the family.

Moles (1982) suggested that children learn through at least four educational processes: home instruction, enrichment activities, contracts or incentives for doing good work, and the modeling of educational pursuits by other family members. Peterson (1989) agreed that showing a positive attitude about school was a good way for family members to help their children improve academically.

Parents have played an important role in their child's educational life by helping with homework (Peterson, !989; Walberg, 1984a). Walberg (1984a) has emphasized that homework is one of the most beneficial ways for children to learn and for parents to help and get involved.

Parent Training

There have been parents who have claimed to not feel comfortable going to their child's school. This was especially true of less-educated parents of at-risk students. Moles (1982) wrote that the parent's level of education did not make a difference in whether they were able to help their child at home. With proper training these parents could use learned strategies to help their child. According to both parents and teachers, parent training has played an important part in getting parents involved in schools.

Davies (1991) suggested two ways to help in the parent training. First, offer a parent resource center at the school where parents could go to gather information through books, pamphlets, videos, and other sources on how to help their child to learn and grow; second, have teachers or other school liaisons make home visits to the parents. These ideas have helped to build partnerships between home and school.

Using home visits proved an effective way to get parents involved because many times parents needed to be personally contacted so they could be recruited to attend workshops or classes on strategies that would help them help their children (Moles, 1982). One such parent program at Middle College High School of New York City offered parents a chance to start a support group where they got together to discuss topics of their choice (Peterson, 1989). Other ways parent training has taken place is when guidance departments offered parenting classes or when teachers held conferences with parents to explain specific educational plans for their children (Moles, 1982; Peterson, 1989).

Partnerships

Research shows there is a growing gap between school and home (Boyer, 1989). A partnership between parents, schools, and communities can lead to dramatic gains in student achievement if they are approached correctly (Walberg, 1984a). Researchers agree that a partnership needs to be formed between homes and schools (Bartolome, 1981; Davies, 1991; Seeley, 1982, 1984; Walberg, 1984a). One study found a strong relationship between the amount of parent involvement and specific qualities that were viewed as positive in teachers at elementary school sites (Bassler, Brissie, Hoover-Dempsey, 1987). Bartolome (1981) states that schools can not work in isolation—they must also work with families and the community.

A true partnership is a common effort toward a common goal, but usually schools see themselves as service-delivery places (Seeley, 1982). That idea tends to lead to conflict and blame. Developing a strong partnership requires changes in the outlook, priorities, and operation of school systems (Seeley, 1984). Teachers need to be comfortable with getting parents actively involved in the education process (Cervone & O'Leary, 1982). When parents interact with school professionals as equals in importance in the education process, it helps to reduce the barriers between the two (Peterson, 1989). This type of a partnership has been shown to produce great gains in student achievement (Flood, 1993). Comer (1986) discussed how a parent participation program helped to increase one school's academic ranking from 32nd to 3rd in 15 years.

School Culture

Schein (1989) described culture as an iceberg. It has a small portion that is visible, but a larger portion that is unseen. The culture of an organization is a tangled web of the written beliefs/rules that are shown to everyone and the unwritten beliefs/rules that are embedded values within the organization that hold the organization together (Deal & Kennedy, 1982; Deal & Peterson, 1999; Schein,1989; Schein, 1992). Schein (1992) identified culture as:

> ...a pattern of shared basic assumptions that the group learned as it solved its problems of external adaptation and internal integration, that has worked well enough to be considered valid and , therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems. (p. 12)

The pattern of beliefs, values, and practices that define a school and how it runs are important in how successfully the school educates children (Deal & Peterson, 1999; Fullan, 1998). A 1979 British study done by Rutter and his colleagues (as cited in Deal & Peterson, 1999) established that a school's culture is the largest factor in promoting the academic achievement of students. This shows the great need for a positive school culture (Deal & Peterson, 1999). The previous topics, time and learning, staff development and teacher retraining, and parent involvement all affect a school's culture. However, the morale of all people involved in a school can also help or hinder the effectiveness of a school's culture on student achievement. The largest effect has come from the morale of the teachers in contact with students.

In the business world, the morale of workers has been of great concern (Tenoschok, 1988). Businesses know that the happier workers are, the more productive they will become. They also know that having a culture that encourages sharing between and among all levels within an organization so that the workers feel a sense self-worth is important (Deal & Kennedy, 1992, Deal & Peterson, 1999, Schein, 1989). It is because of this that much of the research on worker morale and job satisfaction has been done in the field of business. Over the last decade, it has become more and more apparent that teacher and student morale and behavior are important parts of a quality school culture (Deal & Peterson, 1999; Sutherland, 1994). This section will discuss job satisfaction, teacher demographics, extrinsic factors, intrinsic factors, and job dissatisfaction.

Job Satisfaction

A teacher's morale is directly related to job satisfaction and affects the quality of instruction provided by the teacher. Levine (1986) and Tenoschok (1988) believed that schools could not count on retaining the best teachers anymore; therefore, schools must learn to support the efforts of those people they do attract and work to retain the best qualified people. In order to retain the best qualified people, schools must learn what motivates teachers and conduct exit interviews to find out why those leaving the profession chose to do so (Tenoschok, 1988).

In an NEA research report, Bacharach, Bauer, and Shedd (1988) reported that satisfied, highly committed teachers generally perform better than dissatisfied, uncommitted teachers. Satisfied, highly committed teachers were more responsive and patient with their students. They seemed to do what was better for the students they taught rather than what was easier for them to do as teachers. Those satisfied teachers were also less likely to experience teacher burnout and leave teaching.

Hanson (1991) discussed three organizational needs that must be kept in mind when trying to motivate teachers. Those needs were to attract and retain people into the organization, induce people to perform their tasks both conscientiously and effectively, and encourage people to solve problems in effective and efficient ways.

In a 1989 Gallup poll, teachers rated themselves first in job importance but last in job status or prestige (Elam, 1989). This reflects the martyr syndrome that many teachers are functioning under today. Teacher motivation goes up when teachers feel that their opinions are valued. This idea has prompted a tremendous growth in committees that require teacher participation. A problem arises when teachers are put onto these committees and their opinions are still not taken seriously. Teacher participation without teacher empowerment means nothing (Blase & Blase, 1994; Lennard, 1993).

In order to discuss teacher morale and job satisfaction in conjunction with school culture, it is first important to identify those factors that affect teacher morale and job satisfaction. Ruben (1994) has come to the conclusion that the influences on a teacher's job satisfaction can be categorized into three areas: demographic factors, extrinsic factors, and intrinsic factors. All of these factors affect how teachers act and react in and to their environment. The weight that each of these influences carries varies from person to person.

Teacher demographic factors

Demographic factors including gender, race, length of service, age, and educational background all have an influence on a person's personality. Female teachers have been found to be more satisfied with their jobs than their male counterparts. Also, males, if given the chance to re-choose their career, were less likely to choose teaching a second time (Lortie, 1975). Ruben (1994) reported that age has an effect on job satisfaction. He found that as age increased, the likelihood that workers will be more content with their jobs also increased. This positive relationship has also been seen in teachers' educational backgrounds. The more educated the teacher, the more likely the teacher would be satisfied with the job he has to do. When studies of the length of service were done, Ruben reported mixed results. Some researchers reported there was a positive correlation between the teacher's length of service and their job satisfaction, while others reported no correlation.

All of these factors affect a teacher's personality. Although it is known that some people tend to have positive outlooks on life while others have negative outlooks, this optimism and pessimism does not decide teacher job satisfaction. There are many other factors that also affect how teachers relate to those around them and to their jobs.

Extrinsic factors

Extrinsic factors that contribute to higher job satisfaction include salary, working conditions, teacher empowerment, bureaucracy of the school structure, autonomy, principal support, positional conflicts, interpersonal relationships, and home life (Hanson, 1991; Ruben, 1994). Hanson (1991) stated that educational reformers of the 1980s tried to entice high quality college graduates into the teaching profession by raising the external factor of salary. Although this did entice people to enter education as a career, it was not enough to retain them in the profession or to guarantee quality work over the years. Part of the problem was that they saw little or no chance of career advancement. This demonstrates that salary, although important, is not a cure-all for job satisfaction. Such extrinsic factors as listed above were identified by Herzberg (as cited in Hersey & Blanchard, 1993) as hygiene factors rather than motivators as they are not likely to motivate a person to do something. In fact, most of the participants in Lennard's (1993) study found salary to be a dissatisfier because they were not being paid what they felt they deserved for their time and level of education.

One extrinsic factor that helped schools retain some of the teachers who stated they had thought of leaving the profession was the vacation time teachers were provided (Reyes, 1990). The hours and days teachers work are definitely positive external factors for most teachers. There are very few jobs where workers are provided with the vacation time and accrued sick leave received by teachers. Other working conditions like the cleanliness of the school, type of classroom available, safety on the school grounds, and availability of equipment also affect a teacher's morale.

Teacher empowerment is now a very prominent issue (Ellis, 1992; Galgraith, 1973; McLaughlin, 1990). Teachers like to be involved with decision making, especially when the decisions being made will affect them or the children they teach (Lennard,1993; Mohrman, Lawler, Mohrman, 1992). After all, who is better equipped to make important decisions about the education of today's youth than the teachers who spend six or more consecutive hours a day with the children?

The bureaucracy of the school structure can have a significant effect on a teacher's morale and satisfaction with the job. Benson (1983) found that teachers were more willing to leave the profession if they viewed it as bureaucratically organized. By empowering teachers, some of this bureaucracy could be overshadowed as principals begin to help their teachers grow into better leaders (Ellis, 1994; Lennard, 1993). Teachers have always enjoyed much autonomy in their classrooms. Many people in other fields only dream of having similar autonomy (Ruben, 1994).

Principal support has been the making or breaking factor for many teachers (Carroll,1992; Ruben, 1994). Principals need to stay in close contact with classroom teachers so they can be on top of the types of problems that arise and help teachers to overcome these obstacles. Sacken (1994) suggested the elimination of professional administrators from schools. Instead, he suggests that teachers assume the role of the principal on a rotating basis. This would eliminate those administrators who have been out of the classroom for years from making school decisions about teachers and their classrooms. Having good working relationships with the administration, other teachers, parents, and students is important in helping to improve teacher job satisfaction (Kehoe, 1993; Ruben, 1994; Tenoschok, 1988). When teachers know they have the support of a team working together, their job becomes easier and their morale goes up (Ponticell, 1995).

Teachers' home lives affect their job lives. If there are problems at home, the strain of dealing with them is bound to appear in the workplace (Ruben, 1994). If people at the workplace are aware of the worker's problem those people can show support to the worker so he does not feel alone. This should help to lessen the strain on the teacher's morale.

Intrinsic factors

Intrinsic factors consist of teacher achievement, student achievement, goal attainment, and recognition for their work efforts (Ruben, 1994). In 1983, Chapman and Lowther reported that higher teacher achievement resulted in higher job satisfaction. They discovered this after evaluating a questionnaire that had been sent to 5,764 graduates of the University of Michigan College of Education. Although successful job performance has a positive effect on teacher job satisfaction, the reverse of this is not necessarily true.

Student achievement also has an effect on teacher morale (Ruben, 1994). Teachers like to see the difference they have made in their students' understanding of material being taught. For this reason, student achievement has a positive effect on job satisfaction. Student achievement reminds teachers that they have done their job well. This accomplishment, as well as other achievements of the teacher, have ranked the highest among intrinsic motivators (Ruben, 1994; Zahorik, 1987).

Like teacher and student achievement, goal attainment has a positive effect on teacher job satisfaction. In fact, goal attainment has been named as a positive factor in many lines of work. People need to have specific goals so they can see their achievements. Waters (1978) reported that Herzberg, Maslow, and Vroom all agree that motivated behavior is goal directed. The difference is in what each of these men think the goal is that the teacher is striving to fulfill. Herzberg believes the goal is personal growth, Maslow states that the goal is need satisfaction, and Vroom believes the goal to be good performance (Waters, 1978).

Finally, teachers need to be recognized when they do a good job. Such recognition has been lacking in many school systems; yet, it is such an easy thing to incorporate into a school. Ellis (1994) reported that many principals now are recognizing the importance of showing an appreciation for their teachers by sending them thank you notes for the jobs they do. Leonard Paul's (1995) testimony to the U.S. Senate Committee on Labor and Human Resources suggested that it is imperative that teacher incentive programs be placed into schools so teachers can get the recognition they so desperately need.

Job Dissatisfaction

Although many of the factors that have been introduced are known to have a positive effect on teachers' job satisfaction, the absence of these factors does not necessarily indicate low job satisfaction (Waters, 1978). Waters suggested that the relationship between high and low job satisfaction is not so strong that the absence of an indicator would necessarily be negative. Frederick Herzberg's Hygiene theory suggests that those motivating factors that lead to job satisfaction are distinctly separate from those hygiene factors that lead to job dissatisfaction (Hersey & Blanchard, 1993). Waters also stated that people were happiest with their jobs when they knew they had served others' basic human needs for psychological growth. This need to help others grow is the reason most teachers enter the profession. Seeing their students grow is what helps to raise teacher morale and retain teachers in the teaching profession (Ruben, 1994).

It is true that teachers with low morale cause problems that influence the entire system. Their effect on the children can cause children to learn less, detest school, and even drop out (Hunter, 1993; Vander Weele, 1994). It is the responsibility of the teacher to present the students with lessons in a positive and enthusiastic way (Hughes, 1994). Teachers who are satisfied with their jobs might be more likely to express a positive attitude and show greater enthusiasm toward the importance of their work. This attitude and enthusiasm should produce a more productive teacher in terms of collegiality and dedication to the profession (Chuan-Cheng, 1993). Since it is the teacher's job to help the students they serve, it only makes sense to try to raise their morale so they might be given the best possible chance to do their job correctly.

One way to do this is for the administration to wholeheartedly back up teachers (Ellis, 1994; Ruben, 1994). Williams (1983) found that students achieve more when their teachers feel supported by their administrators. It has been argued as to whether the cause of this higher achievement is the increase in the teachers' morale, or if the higher achievement is the cause of the increase in the teachers' morale. Although no agreement has been reached on this topic, researchers do agree that the two have a tremendous effect on each other. Schmoker (1994) insisted that schools regularly analyze school performance data so that necessary changes can be made before problems become too large to handle. This is necessary if the children are to achieve to their highest potential.

Madden, Lawson, and Sweet (1976) found that when comparing teachers at schools with lower achieving students with teachers at schools with higher achieving students, teachers at schools with the higher achieving students were significantly more satisfied with various aspects of their jobs than the teachers at the schools with the lower achieving students. It appears that these two qualities, high achieving students and high teacher job satisfaction, go hand-in-hand. The morale of teachers is extremely important for the success of their students. Teachers with higher morale provide an atmosphere conducive to learning which results in happier students and more effort on the student's part (Williams, 1983). Therefore, students might achieve more than would be expected of them because they are putting in extra effort.

As knowledge is gained about what provides teachers with job satisfaction and job dissatisfaction, better provisions will be made to help the classroom teacher. The services that will then be given to teachers may lead to increased job satisfaction and, in return, an increase in the quality of the educational experiences for students (Chuan-Cheng, 1993).

Until then, it is important to remember the positive effect that teachers can have on their students. Administrators and other school personal must try to provide students with schools that have a strong positive culture. This will help to ensure the children achieve higher, have positive experiences in school and with their teacher, and have the best possible chance to be successful (Deal & Peterson, 1999).

Summary

In this review of the literature, research was presented which showed the various methods used to raise student achievement. Researchers have agreed on several factors of concern when trying to raise student achievement. Extending the time spent in the classroom cannot solve the problem of low achievement if time was not the factor that was lacking. Extending engaged time where the student actually received more instruction has helped. For engaged time to be extended, it was not always necessary for the school day or school year to be extended. It was necessary for teachers to be retrained on how to use time more effectively. This required new staff development to be offered so that lasting change would occur. Such staff development included training on how to get parents more involved in their children's education. Parent support of the school is a vital part of raising student achievement. Finally, as engaged time, staff development, and parent support increased, teacher morale also increased so that the student achievement increased even more. All of these factors appear to go together when trying to raise the achievement of all students. These factors, however, have not closed the gap between the achievement of students not considered to be at risk, and those students called at risk.

Even with engaged time extended, staff development offered, parent involvement increased, and teacher morale raised, Walberg (1988) and Wiley and Harnischfeger (as cited in Fredrick & Walberg, 1980) deemed it was necessary to extend the school day or school year to get the highest increase in student achievement. This was deemed necessary because studies had shown moderate correlations between days or hours in school and student achievement. Walberg (1988) went on to state that until U.S. schools extend the school day or year, other countries' students will continue to excel to a higher level at a faster rate than U.S. students. The National Education Commission on Time and Learning (1994) recommended that the age-old question of time be addressed yet again.

There is a clear need to develop and evaluate innovative programs that combine the aspects of an extended school year with improved techniques for promoting staff development, parent involvement, and time-on-task. This study was designed to examine such an experimental program introduced as a Break-the-Mold intervention in one Florida school district.

CHAPTER 3
METHODOLOGY

Introduction

The purpose of this study was to determine whether students who attended a Break-the-Mold school and students who did not differed in their academic achievement. In order to answer the research questions, a description of the setting, participants, study design, instrumentation, data collection method, and data analysis are detailed in the sections that follow.

Research Questions

The following research questions were addressed in this study.

1. Was there a significant difference between the total reading CTBS/4 scores of the students attending the Break-the-Mold schools and those of the students attending the traditional schools after controlling for prior reading achievement level, gender, race, and socioeconomic status?
2. Was there a significant interaction effect of treatment with gender, race, or socioeconomic status on CTBS/4 reading scores after controlling for prior reading achievement level?
3. Was there a significant difference between the total mathematics CTBS/4 scores of the students attending the Break-the-Mold schools and those of the students attending the

traditional schools after controlling for prior mathematics achievement level, gender, race, and socioeconomic status?

4. Was there a significant interaction effect of treatment with gender, race, or socioeconomic status on CTBS/4 mathematics scores after controlling for prior mathematics achievement level?

Gender, ethnic group (race), and socioeconomic status (free/reduced/regular price lunch status) have shown a history of having an effect on a student's academic achievement in reading and/or mathematics (Fredrick & Walberg, 1980; Karweit, 1984; Walberg, 1988; Walberg, Niemiec, & Fredrick, 1994). For that reason, it was important to attempt to control for those factors that might have influenced the posttest scores.

The Break-the-Mold Intervention

The Break-the-Mold Program intervention extended the school year for students and teachers by 15 days at the end of the school year. Students attended school for 195 days each year rather than the traditional 180 days each year. Additionally, teachers at the Break-the-Mold schools were given extra paid work days during which they attended inservice sessions to learn how to effectively use the extra time provided so that more time would be spent on task.

Efforts were made to have principals, teachers, parents, and students become team members in the Break-the-Mold schools. Principals and teachers were asked to sign a school-home commitment form that stated they would put the child's welfare first, meet with parents, listen to concerns, do their jobs the best they could, and participate in the Parent Teacher Association (PTA) program. The parents of the students at the Break-the-

Mold schools were asked to sign the same commitment form stating that they would get their children to school on time, check and sign their children's school work, participate in the home activities in which their children took part, visit their children's classrooms, chaperone at least one field trip or daytime activity, allow their children to get proper rest at night, attend at least two parent conferences during the year, and join the PTA. The students were also asked to sign the school-home commitment stating that they would respect other students' space, do their assignments, and come to school with learning on their mind. The school-home commitment form is in Appendix A.

Description of Schools

The study was conducted in a small school district in central Florida. The district had chosen two elementary schools to participate in the Break-the-Mold Program for a minimum of five years. Those schools were chosen because of the historically low standardized test scores received by students in these schools. Two comparison schools with similar characteristics were also chosen from the same district. The schools participating in the Break-the-Mold Program are denoted as Schools A and B. The schools chosen as comparison schools for the control group are denoted as Schools Y and Z.

School A was originally built in 1955. In 1990 some additional classrooms and restrooms were built to accommodate the growing population. In 1994 major renovations were completed. The old classrooms were torn down and new larger rooms were built. The entire school was redone including the physical education area.

The school is located in a low socioeconomic area which is predominately white. The school population includes black students who are bused from areas outside the immediate neighborhood of the school.

School B was originally built in 1938. Major additions were made to the school in 1987. In 1992 a new kitchen and health services area were added to the school. Next, in 1994, the physical education area was redone and a pavilion was added. Then, in 1995, another major renovation and addition was done to expand and beautify the school and its grounds. At that time, a new entryway was designed for the school so parents, children, and buses would not have to travel through the run-down housing area surrounding the school. This school is located in an extremely low socioeconomic area of the county. The immediate neighborhood of the school predominantly consists of black families.

School Y is the newest of the schools in the study. It was built in 1984 and has had no major renovations. It is located near the historic area of the city which is predominately white, but it is surrounded by low socioeconomic neighborhoods where residents are predominately black families.

School Z was originally built in 1955. In 1987 some additions and renovations were done. In 1992 a new kitchen was added, and in 1994 a physical education pavilion was added. At the time of this study, School Z was undergoing another major renovation ($8 million) of the entire school which will not be completed until the year 1999-2000. This school is located in an extremely low socioeconomic area surrounded by project housing. Some of the students in those project areas attend School Z while others are bused to nearby schools. This school is in an area of town where residents are predominately black.

Other criteria were also used to identify Schools Y and Z as appropriate control schools. These criteria were the degrees, experience, and turnover of the administrators; degrees, experience, and turnover of the teaching staffs; socioeconomic status of students determined by the number of free/reduced price lunches; ethnic makeup of the samples; and histories of second-grade CTBS scores. Information demonstrating the comparability of the four schools is presented in Tables 1 through 8 in Appendix B.

Participants

The design of this study required the comparison of performance of students in the experimental and control schools. The experimental group consisted of all second grade students at the Break-the-Mold schools during the 1995-96 school year who were in continuous enrollment at one school throughout their fourth grade year, the 1997-98 school year. Continuous enrollment was verified by identifying students who took their second grade CTBS and fourth grade CTBS at the same school, were accounted for on both third grade FTE counts, and were accounted for by the Food Services Department for the lunch program at their school on the last day of school during their third-grade year.

The control group included students meeting the same attendance criteria as the experimental group, but who attended two schools in the district similar to the schools in the experimental group. Similar schools were found by comparing the schools' neighborhood environments and the condition of the facilities.

Because all students who attended the four identified schools in the study and met the attendance criterion were accepted into the study, there were differences in the number of students from each school, gender, ethnic group, and socioeconomic group. These differences are shown in Table 3-1.

Besides the previously mentioned differences, the number of students who took each portion of the CTBS/4 was also different; therefore, the number of students who took the CTBS/4 reading test differed from the number of students who took the CTBS/4 math test. This occurs at schools because of student absences and because some students were in special programs that would allow them to not be tested in certain subject areas.

Table 3-1

Number of Students in Gender, Racial, and Lunch Categories by School

Variable	Category	School A	School B	School Y	School Z
Gender	Male	39	18	26	22
	Female	33	15	42	18
Racial Group	White	49	5	24	16
	Black	17	25	43	17
	Hispanic	6	2	1	5
	Asian	0	1	0	2
Socioeconomic Status	Regular Price Lunch	29	8	11	11
	Reduced Price Lunch	7	3	9	4
	Free Lunch	36	22	48	25

Study Design

Because the Break-the-Mold Program was implemented by the school district, the random assignment of schools to treatment was not possible. Therefore, it could not be assumed that the schools housing the experimental and control groups were equivalent in the beginning. A pretest, posttest, non-equivalent group design was used with analysis of covariance in an attempt to adjust for random group differences.

The quasi-experimental design used in this study was a variation described by Campbell and Stanley (1963), which is referred to as "The Nonequivalent Control Group Design" (p. 47). This design is recommended when the creation of random experimental groups is impossible. It allows the researcher to use intact groups rather than a random assignment of subjects, and it takes into account the fact that the two groups may not be equivalent to begin with by using the analysis of covariance (ANCOVA) in the interpretation of the data.

The design is diagrammed as follows:

O X O

O   O

The first symbol O in each row represents the pretest, second-grade Comprehensive Tests of Basic Skills, Fourth Edition (CTBS/4), given to both groups. The symbol X represents the treatment given to the experimental group, the Break-the-Mold Program. The second symbol O in each row represents the posttest, fourth-grade CTBS/4, given to both groups. The horizontal dimensions indicate time order, and the vertical dimensions indicate simultaneous activity.

This design controlled for potential effects due to maturation. Instrumentation was controlled by having both groups take the Comprehensive Tests of Basic Skills, Fourth Edition (CTBS/4), as the only instrument. Intrasession history could be a threat to internal validity as the students in the experimental group and the control group had different teachers and attended different schools with unique happenings at each school during the research time period. Regression effects and differentiated selection are the primary threats to the internal validity of the findings because the schools for the Break-the-Mold Program were specifically selected for their low test performance.

This design may be susceptible to the external validity threat of the interaction of testing and intervention, but in this study that seemed unlikely. As Campbell and Stanley (1963) noted

> ...in research on teaching, one is interested in generalizing to a setting in which testing is a regular phenomenon. Especially if the experiment can use regular classroom examinations as Os, but probably also if the experimental Os are similar to those usually used, no undesirable interaction of testing and X would be present. (p. 18)

The interaction of selection and intervention could pose a threat because the two schools on the Break-the-Mold Program were not randomly selected. The interaction of regression or history with intervention may also pose threats to the internal validity of findings in this study. Even the interaction of mortality and intervention could pose a threat if parents intentionally moved out of the Break-the-Mold school zone so their child could avoid the extended school year. Lastly, reactive arrangements could be a threat to external validity because the students in the Break-the-Mold schools were aware that they were the only students in the district who went to school 195 days, and their friends at other schools started their summer vacations three weeks earlier.

Instrumentation

The Comprehensive Tests of Basic Skills, Fourth Edition (CTBS/4) was administered to both groups during the spring of 1996 while the subjects were in second grade, and it was administered again during the spring of 1998 while the subjects were in fourth grade. The CTBS/4 reading total and mathematics total were used to determine student achievement. The CTBS/4 is a revision of the established general achievement test.

Hopkins (1992) reported that the CTBS/4 breaks new ground and is one of the best general achievement tests available to school districts. Miller (1992) commented favorably about the CTBS/4 including conditional standard errors of measurement. He summarized the test's psychometric features to be strong enough to make the test technically sound. The weaknesses of the CTBS/4 were recognized as general to nearly all standardized achievement tests. One weakness of the CTBS/4 is the unanswered question of whether the norming sample was truly representative of the population. The reliability and validity of the CTBS/4 is as good, if not better, than any other general achievement test battery and is an acceptable test to use when studying student achievement (Hopkins, 1992; Miller, 1992). In a comparison study, however, deficiencies in the norming sample should affect both groups equally.

Data Collection

The student achievement data were collected using the Comprehensive Tests of Basic Skills, Fourth Edition (CTBS/4). This test was administered to all second and fourth grade students during the spring of 1996 and 1998 respectively. At the time the CTBS/4 test was given in 1996, the students at the Break-the-Mold schools had not received the extra 15 days of instructions. By the time the CTBS/4 was given in 1998, the students at the Break-the-Mold schools had received a total of 30 more days of instruction than the students not at the Break-the-Mold schools. The test data were collected by school district personnel as part of the district's regular testing program.

At the end of the 1997-98 school year the researcher collected qualitative data from the Break the Mold schools by visiting them and observing the time on task spent in individual second through fourth grade classrooms. The researcher also reviewed copies of various teachers' lesson plans for the 1997-98 school year from the Break-the-Mold schools in this study.

Data Analysis

Factorial analysis of covariance (ANCOVA) was used to test the hypotheses of interest in this study. The primary independent variable was treatment (i.e., Break-the-Mold Program or traditional instructional program). The second-grade CTBS/4 score was the covariate and categorical control variables were race, gender, and socioeconomic status (student lunch-eligibility status). The dependent variable was fourth-grade CTBS/4 score. Separate analyses were conducted for reading and mathematics.

The ANCOVA was conducted in two stages: (a) a full-model analysis was run including the covariate, treatment, control variables, and all two-way interactions between the treatment and the three control variables; (b) a reduced-model analysis was run including the covariate, treatment, control variables, and only significant two-way interactions identified from the full-model analysis.

Following the detection of a significant interaction between treatment and any demographic variable, a simple main effects analysis was conducted to test for differences between treatment and control effects for each separate category of the demographic variable. Tukey's method of pairwise comparisons was used to examine all possible pairwise interactions following detection of a significant effect for a variable with more than two categories or an interaction. Results from these analyses are presented in Chapter 4.

Summary

The purpose of this study was to determine whether there was a significant difference in academic achievement between students who attended a school implementing the Break-the-Mold Program and students who did not. The Break-the-Mold Program consisted of extending the school year to 195 days, providing effective teacher inservice training so time would be used more efficiently, and requiring parents to sign a contract about their involvement with their children's school life.

Participants were 213 students attending four different schools who were preselected by a small county in central Florida. The Break-the-Mold Program was introduced in two of the schools. The Comprehensive Test of Basic Skills, Fourth Edition (CTBS/4) was used to measure academic achievement. A factorial analysis of covariance was used to test for differences in student achievement in the intervention and control groups. Both a full and a reduced linear model of effects of treatment and demographic variables were to test for significant interactions and main effects in reading and mathematics achievement.

CHAPTER 4
RESULTS AND ANALYSIS OF DATA

This study examined whether students who attended a Break-the-Mold school and students who attended a traditional school differed in terms of academic achievement. This chapter contains an analysis of the data examined to address the research questions. The experimental group received the intervention of the Break-the-Mold Program. The control group did not receive the intervention of the Break-the-Mold Program.

Table 4-1 displays the mean and standard deviation of the reading portion of the CTBS/4 for each group, control and experimental, at grades 2 and 4 respectively. RSS2 represents reading scaled score at grade 2; RNP2 represents national percentile at grade 2. RSS4 represents reading scaled score at grade 4; RNP4 represents the corresponding national percentile rank. The table shows an expected increase in the scaled scores in reading from second to fourth grade for both the control and experimental groups. It also shows a gain in national percentile rank standing for the control group over time. Unexpectedly, the national percentile rank standing of the experimental group remained relatively stable. Since the national percentile rank is dependent upon how other students in a national norm group have performed, it is possible for one set of scores to rise while another stays unchanged. In this case, students in the experimental group were performing at a higher level than those in the control group (with a national percentile rank of approximately 43 to 33) at second grade, and they retained that advantage in the fourth grade (with a national percentile rank of approximately 42 to 38); although, the performance gap between the two groups lessened.

Table 4-1

Score Means and Standard Deviations of Reading Scores on CTBS/4 for Participants

Group	Test	Mean	Standard Deviation	N
Control				
	Pretest			
	RSS2[a]	599.93	73.20	97
	RNP2[b]	33.41	30.05	97
	Posttest			
	RSS4[c]	674.80	49.55	97
	RNP4[d]	37.86	27.22	97
Experimental				
	Pretest			
	RSS2[a]	623.73	68.71	92
	RNP2[b]	42.55	31.44	92
	Posttest			
	RSS4[c]	679.83	49.25	92
	RNP4[d]	41.55	26.76	92

Note: [a]Reading Scaled Scores for grade 2. [b]Reading National Percentile for grade2. [c]Reading Scaled Scores for grade 4. [d]Reading National Percentile for grade 4.

Table 4-2 displays the mean and standard deviation of the pretest scores for the mathematics portion of the CTBS/4 for each group, control and experimental, for both scaled scores and percentile ranks (MSS2 and MNP2 respectively). This table also reveals an increase in the scaled scores for mathematics from second to fourth grade for both the control and experimental groups. Here again, an increase in national percentile rank standing for the control group is also shown, while the national percentile rank of the experimental group remained relatively stable.

Only students with complete data in a subject area were used in the analysis. This caused the number of participants between the reading test and the mathematics test to differ. Some students are in special programs for either mathematics or reading; therefore, they were exempt from standardized testing in that particular subject area.

Table 4-2

Score Means and Standard Deviations of Mathematics Scores on CTBS for Participants

Group	Test	Mean	Standard Deviation	N
Control				
	Pretest			
	MSS2[a]	580.77	65.01	106
	MNP2[b]	35.39	29.41	106
	Posttest			
	MSS4[c]	683.44	47.20	106
	MNP4[d]	42.09	29.90	106
Experimental				
	Pretest			
	MSS2[a]	605.87	64.24	103
	MNP2[b]	46.99	30.71	103
	Posttest			
	MSS4[c]	688.44	47.44	103
	MNP4[d]	46.38	31.78	103

Note: [a]Mathematics Scaled Scores for grade 2. [b]Mathematics National Percentile for grade 2. [c]Mathematics Scaled Scores for grade 4. [d]Mathematics National Percentile for grade 4.

Research Questions

The following research questions were addressed in this study:

1. Was there a significant difference between the total reading CTBS/4 scores of the students attending the Break-the-Mold schools and those of the students attending the traditional schools after controlling for prior reading achievement level, gender, race, and socioeconomic status?
2. Was there a significant interaction effect of treatment with gender, race, or socioeconomic status on CTBS/4 reading scores after controlling for prior reading achievement level?

3. Was there a significant difference between the total mathematics CTBS/4 scores of the students attending the Break-the-Mold schools and those of the students attending the traditional schools after controlling for prior mathematics achievement level, gender, race, and socioeconomic status?
4. Was there a significant interaction effect of treatment with gender, race, or socioeconomic status on CTBS/4 mathematics scores after controlling for prior mathematics achievement level?

Results for CTBS/4 Reading

The results of the ANCOVA for addressing statistical hypotheses related to the CTBS/4 reading scores research questions are presented in Tables 4-3 and 4-4. The results of the full linear model for reading are shown in Table 4-3. The pretest was used as a continuous covariate with treatment, gender, race, and socioeconomic status as categorical independent variables and treatment*socioeconomic status, treatment*gender, and treatment*race as interactions.

In the running of the full linear model, the researcher tested for significance in the interactions between the treatment and each demographic variable. No interactions between demographic variables were examined. If one of the interactions was significant, then that interaction was retained in the running of the reduced linear model to see if the significance was still retained. If the reduced linear model still retained the significance, then the Least Squared Means and Tukey pairwise comparison were run to decide where the significant difference exists.

The results of the full-model factorial ANCOVA show that the only significant interaction effect was treatment*socioeconomic status. Therefore, in the running of the reduced linear model, Table 4-4, the only interaction retained was treatment*socioeconomic status interaction. Both the pretest (covariate) and race (a demographic control variable) also contributed significantly to student reading achievement.

Table 4-3

Full-Model Factorial ANCOVA Using CTBS/4 Reading Scores as Dependent Variables

Source	DF	Type III SS	F Value	Pr > F
RSS2 (pretest)	1	177613.77	182.48	0.0001*
Treatment	1	689.88	0.71	0.4010
Race	3	7959.79	2.73	0.0457*
Gender	1	203.75	0.21	0.6479
Socioeconomic Status	2	3540.85	1.82	0.1653
Treatment*Race	3	4250.75	1.46	0.2284
Treatment*Gender	1	423.23	0.43	0.5105
Treatment*Socioeconomic Status	2	9164.55	4.71	0.0102*

*$p < 0.05$

Table 4-4

Reduced-Model Factorial ANCOVA Using CTBS/4 Reading Scores as Dependent Variables

Source	DF	Type III SS	F Value	Pr > F
RSS2 (pretest)	1	175090.00	179.22	0.0001*
Treatment	1	6603.45	6.76	0.0101*
Race	3	8495.53	2.90	0.0365*
Gender	1	333.55	0.34	0.5597
Socioeconomic Status	2	3273.77	1.68	0.1901
Treatment*Socioeconomic Status	2	8281.05	4.24	0.0159*

*$p < 0.05$

The results of the reduced model factorial ANCOVA show that treatment*socioeconomic status interaction remained significant. The main effects of pretest, race, and treatment were significant as well. It is inappropriate to attempt to interpret an overall treatment effect when a significant interaction is found between treatment and one of the central control variables. Instead, the treatment effect must be tested separately for each category of the demographic variable. For this reason, the significant interaction on the reading variable was followed up by comparing the difference in the least squared means (LS means) between the experimental and control groups independently for the socioeconomic status categories of free lunch group, reduced price lunch group, and regular price lunch group. The LS means are the means of the groups on the posttest scores at fourth grade, statistically adjusted for the prior level of reading achievement in second grade, and are shown in Table 4-5.

Table 4-5

Least Squared Means (LS Means) of Treatment and Socioeconomic Status Combinations

Treatment	Free Lunch	Reduced Lunch*	Regular Lunch	Average
Control Group	680.6	710.9	680.6	690.7
Experimental Group	671.9	667.1	686.2	675.1

Note: *Shows the only significant difference between the control and experimental group students was with those on reduced price lunch.

According to the results of the LS means, the only significant difference was found for the reduced-price lunch group. In this category, students in the control group performed better than students in the experimental group in reading. This means that for the students who qualified for reduced price lunch, the control treatment was more effective than the Break-the-Mold Program. For students in the lowest and highest socioeconomic groups there were no significant differences in reading performance of students in the Break-the-Mold Program and those in the traditional program.

The Tukey pairwise comparisons for each of the three lunch status subgroups is shown in Table 4-6. This table shows the magnitude of difference found between the treatment groups for all lunch status categories, using LS means. The reduced price lunch group shows the largest difference.

Table 4-6

Contrast for Control-Experimental Groups for Three Socioeconomic Status Groups

Group	Contrast of LS Means
Free Lunch	8.7
Reduced Lunch	43.8*
Regular Lunch	14.6

Note: LS Means = Least Squared Means.
*Shows the significant difference in reduced lunch group by showing the largest contrast in LS Means.

Results for CTBS/4 Mathematics

The results of the ANCOVA for addressing statistical hypotheses related to the CTBS/4 mathematics scores research questions are presented in Tables 4-7 and 4-8. The results of the full linear models for mathematics are shown in Table 4-7. The pretest was used as a continuous covariate with treatment, gender, race, and socioeconomic status as categorical independent variables and treatment with socioeconomic status, gender, and race as interactions. In running the full linear model, the researcher again tested for significance in the interactions between the treatment and the demographic variables. If a significant interaction occurred, then that interaction was retained and included in the running of the reduced linear model to see if the significance was still retained.

Table 4-7

Full-Model Factorial ANCOVA Using CTBS/4 Mathematics Scores as Dependent Variables

Source	DF	Type III SS	F Value	Pr > F
MSS2 (pretest)	1	138747.00	113.98	0.0001*
Treatment	1	753.08	0.62	0.4325
Race	3	1379.31	0.38	0.7692
Gender	1	1163.95	0.96	0.3294
Socioeconomic Status	2	9964.33	4.09	0.0182*
Treatment*Race	3	2431.98	1.00	0.3701
Treatment*Gender	1	7.98	0.01	0.9355
Treatment*Socioeconomic Status	2	4352.97	1.19	0.3140

*$p < 0.05$

The results of the full-model factorial ANCOVA show that there were no significant interaction effects between the treatment and any of the demographic variables. The main effects of pretest and socioeconomic status were significant. Therefore, in running the reduced linear model for reading, shown in Table 4-8, no interactions were retained. This should have increased the power of the tests of significance for main effects.

Table 4-8

Reduced-Model Factorial ANCOVA Using CTBS/4 Mathematics Scores as Dependent Variables

Source	DF	Type III SS	F Value	Pr > F
MSS2	1	137084.35	113.28	0.0001*
Treatment	1	3624.79	3.00	0.0851
Race	3	2163.64	0.60	0.6183
Gender	1	1507.33	1.25	0.2657
Socioeconomic Status	2	9642.26	3.98	0.0201*

*$p < 0.05$

When all interactions were removed, the results of the reduced model factorial ANCOVA show no significant effects except for the pretest and socioeconomic status categories. There was no significant differential effect on student mathematics performance due to treatment (although the probability of the F test for this effect, 0.0851, approached the nominal alpha level, 0.05).

Information and Observations From Break-the-Mold Schools

During the last 15 days of the school year, the researcher spent time at both of the Break-the-Mold schools to gather information on the history and structure of the school, to document changes that had occurred since implementation of the Break-the-Mold Program, and to learn how the extra 15 days of time were being used. Following are the information and observations gathered from each school.

School A

School A was named a Five Star School for the year 1996-97. The Five Star School award is given to schools who have frequent monitoring of student progress, a safe school environment, community involvement, and strong leadership. During the first three years while School A was on the Break-the-Mold Program, the number of non-school personnel volunteer hours (dividend hours) has continued to increase. During the 1995-96 school year, the school accounted for 3005 dividend hours. For 1996-97, 3512 hours were accounted for, and in 1997-98, 3850 hours were recorded.

The school has a principal, assistant principal, dean (behavioral specialist), and a school liaison. All of these people share responsibility for the students of the school and regularly meet with the children. The assistant principal holds a leadership training club where she trains and guides a group of students on how to be appropriate leaders. She also plans the teacher inservice activities with the input of others. The school liaison meets with children and parents at school and at the parents' homes to help the families stay involved with their children's education.

As the walkers arrive at school, they line up along the fence that surrounds the front of the school. They stand in that line until it is the appropriate time for them to enter the school yard. During this time the bus riders sit on their bus waiting for the time to enter the school yard. At the appropriate time, the bus riders are released from their buses onto a yellow line which merges them with the walkers. The students follow with their left foot on the line until they reach the ramp for their classroom or the cafeteria. There are adult supervisors to greet them and guide them in the right direction.

The researcher noted the orderly behavior of the students both in class and on the ramps of the school. The teachers all had procedures visibly listed to let the students know what was expected of them. Classes were started with daily morning exercises. The teachers held small groups with students in reading. Most of the class schedules listed approximately 1 hour being spent on math and 3 ½ hours being spent on language arts with science and social studies integrated into the curriculum. The other two hours were spent at in the computer lab, at lunch, and at a special area (physical education, art, music).

School B

School B was named a Five Star School for the year 1996-97. During 1996-97, 7576 dividend hours were accounted for, and in 1997-98, 2006 hours were recorded from the beginning of the year until April.

The first year of the Break-the-Mold Program, School B had a principal and an assistant principal. For the second and third years of the program the school administration was reorganized and there is now a principal, curriculum specialist, and curriculum leader. The curriculum leader deals with discipline while the curriculum specialist plans and organizes inservice activities for the teachers.

During the observation the researcher noted that nearly half of the day was spent on planned recreational activities. The principal and teachers reported they wanted to make the extra 15 days more fun since the students' friends from other schools were already on summer vacation. Many of the rooms did not have class procedures posted. Teachers generally said they were already packing up for the end of the year. When class schedules were listed, they typically included about 3 ½ hours of instruction time and 3 hours spent on recess, special areas, and end-of-the-day games.

Comparison of School A with School B

From the observations made by the researcher during the last 15 days of school, it appeared that School A and School B were quite different. Although School B offered learning activities on a daily basis, much time was spent on recreational activities. The researcher did not see this type of activity taking place at School A, where a more traditional academic school day was followed.

Summary

The results of this study showed a significant interaction for treatment with socioeconomic status on reading when the dependent variable was the CTBS/4 reading scores. Tukey's pair-wise analysis showed that this difference was the result of a difference for the reduced price lunch students between those in the control and the experimental groups. The least squared means showed that reduced-price lunch students in the control group did better than those students in the experimental group. No significant differences and no interactions were found between the control and experimental groups on mathematics achievement when the dependent variable was the CTBS/4 mathematics scores.

Additional information documenting the history and structure of the Break-the-Mold schools prior to and during the implementation of the intervention as well as brief descriptions of observations made by the researcher during the last 15 days of the 1997-1998 school year at each of the Break-the-Mold schools were provided. Chapter 5 provides summary, discussion, and recommendations.

CHAPTER 5
SUMMARY, DISCUSSION, AND RECOMMENDATIONS

Overview

Instructional time and time-on-task for students have a well-documented relationship with student achievement. In the United States the agrarian model of having three months off for summer vacation has been in place for over 100 years (Perry, 1991). It has not been common practice to implement programs offering longer school years and days even though the length of the school year is much shorter than most other industrialized countries (Cawelti & Adkinsson, 1985; Walberg, Niemiec, & Fredrick, 1994). The National Education Commission on Time and Learning (1994) reported that U.S. students were trying to learn the same amount of material as that learned in other countries but with half as much time spent on task.

To increase students' academic achievement, researchers found that several other aspects of the educational system needed to be addressed (Karweit, 1984; Walberg, 1988). Training teachers to more effectively and efficiently use academic instructional time was one such aspect. Changing instructional practices required making significant changes in the school culture (Deal & Kennedy, 1982). Another aspect needing to be addressed was the critical role that parents play in the education of their children. Most of the concepts children need to know prior to entering school, and many acquired during their school years, are learned within the family (Seeley, 1982).

The problem addressed in this study was to determine whether students who attended a Break-the-Mold school and students who attended a traditional school differed in achievement. The Break-the-Mold Program was conceived to address the concerns raised by the National Education Commission on Time and Learning by focusing on instructional time, time on task, teacher training, and parent involvement. Students who attended a Break-the-Mold school were expected to display greater improvement over the two years than the students who did not attend a school having the Break-the-Mold Program.

Empirical Basis for the Break-the-Mold Program

One recurrent theme in the literature stresses that time alone is unlikely to raise student achievement. Additional factors found to affect student achievement were time-on-task, teacher training, parent involvement, and school culture. One way to improve student achievement is for the missing factor or factors to be included in intervention programs. If essential components are missing, positive results are unlikely to appear.

Program Description

The Break-the-Mold Program focused on lengthening the school year for the students by 15 days, offering training on how the teachers were to work with the students during the extra time, and offering more workdays for the teachers at the Break-the-Mold schools. Walberg, Niemiec, and Fredrick (1994) supported lengthening the school day/year as long as the extra time is not wasted. Their research suggested that if 94 minutes were added to a school day, only 24 of those would be used for instruction. Research by Karweit (1984) reported there was a general positive association between time and learning; however, the amount of engaged time provided the most significant effects. All of her studies showed inconsistencies in the correlation between time and learning. Staff development was suggested as an important method of sharing ideas and beliefs and spreading a common culture (Deal & Peterson, 1999).

A third focus of the Break-the-Mold Program was to effect a change in the school culture by allowing the principal to interview and hire all teachers on staff. The hiring of staff with similar beliefs, values, and practices has been found to be an important factor in how successfully the school educates children (Deal & Peterson, 1999; Fullan 1998).

A fourth focus was to require every student, parent, teacher, and principal to sign a school/home commitment form that described how they would participate in the learning process. Such school/home commitment has been found to be important to improving relationships between parents and school personnel; however, it has also been reported that such commitments are only effective if everyone involved does their part (Bartolome, 1981; Davies, 1991; Seeley, 1982, 1984; Walberg, 1984a).

The control group consisted of two schools that displayed similar demographic characteristics and achievement to the experimental group's schools, but operated on a traditional 180-day school calendar. Students in the experimental group attended schools in which teachers received special training on using time more effectively, school/home commitments were signed by every student, parent, teacher, and principal, and the school year was lengthened by 15 days a year for a total of 195 days.

Implementation Limitations

In implementing educational interventions in field settings, the planned intervention often encounters obstacles. In this *post hoc* study, several threats to validity of conclusions about program effectiveness arose. First, teacher turnover rate at the Break-the-Mold schools during the two-years of this study may have prevented some teachers from receiving the necessary training on how to use time more effectively. Second, there was no documentation on whether the parents fulfilled their school-home commitment nor were there consequences for the principals, teachers, parents, or students for not fulfilling their part of the contract. Third, there was no consistency in the use of the extra 15 days added onto the end of the school year over the two experimental schools.

Summary of Results

The results of this study were as follows:

1. The Break-the-Mold Program brought about no significant difference in the reading achievement of the 213 students in this study who were in second grade in 1995/96 and in fourth grade in 1997/98.
2. A significant interaction for treatment*socioeconomic status occurred that affected the dependent variable of CTBS/4 reading scores. Specifically, reduced lunch students in the control group did better than their counterparts in the experimental group.
3. No significant difference was found between the control and experimental groups on CTBS/4 mathematics scores.
4. No significant interventions between treatment and demographic variables affected CTBS/4 mathematics scores.

Discussion

One interesting and unexpected observation was the dramatic increase in the national percentile rank from second to fourth grade for the control group, while the experimental group's national percentile scores decreased 1.00 point for reading and 0.61 point for mathematics. The control group experienced an increase of 4.45 points in reading national percentile rank and an increase of 6.70 points in mathematics national percentile rank from second to fourth grade. Although the experimental group maintained a higher national percentile score than the control group, the extraordinary growth of the control group was not expected. This could perhaps explain the lack of apparent impact of the Break-the-Mold intervention.

A closer look at the individual schools in the control group showed that School Y reported the dramatic increase in scores that caused the control group's national percentile rank to rise. County office personnel who work with elementary schools reported that there had been no specific intervention program implemented at either of the control schools during this study. School Y personnel confirmed that this was true in their school. However, School Y received a new principal just prior to the last year of the study when the previous principal was removed from administration in the county (see Appendix B-4: Principals and Their Experience at Different Schools). Low morale had been reported in the previous schools in which the replaced principal had worked. Removal of this principal from School Y may have resulted in improved morale for all staff members that, in turn, may have affected student achievement. This possible explanation is consistent with the reported correlation between teacher morale and how teachers perform their duties

(Bacharach, Bauer, & Shedd,1988; Deal & Peterson,1999; Ruben, 1994). In fact, Carroll (1992) and Ruben (1994) reported that the principal can be a major factor determining teacher morale and function.

Just prior to the last year of this study, major changes in the control group's teaching staffs were made. School Z's principal was able to choose a new teaching staff so that the new teachers could start preparing for the math/science/technology program that would start at the school the year after this study was completed. When the new principal took over at School Y, this individual was also given the opportunity to choose an entire new staff. Deal and Peterson (1999) suggest this type of turnover is important when making a cultural change. This change of administration and staff at School Y may have caused a cultural change which could account for the increase in scores.

Another possible explanation for the unexpected finding of no effect was that all schools in the study had a high percentage of teacher turnover. That meant that the teachers at the Break-the-Mold schools who originally received training on how to use time more effectively were replaced with teachers who did not receive the same training in that area. The turnover for the experimental group was even greater than that of the control group. This could have had an effect on student achievement and the results of this study. The teacher turnover rates are shown in Appendix B-3.

The principals at three of the four schools in the study were changed during the time of the study. A change in administration could have affected the cultures in these three schools and, consequently, the morale of the staff and students. This change in school culture and morale could affect student achievement, as noted in a 1979 British study done by Rutter and his colleagues (as cited in Deal & Peterson, 1999).

Finally, none of the studies cited in the review of the literature dealt with extending the school year by only 15 days. Most of the studies extended the school year by 30 days (Jones, 1994; Karweit, 1985). For example, the Committee on Education to the Florida House of Representatives (1995) reported that Snively Elementary in Polk County showed remarkably good improvement on their Florida Writing Assessment exam in 1994 after having their school year extended by 30 days. No previous studies reported whether 15 extra days of school might make a difference in student achievement. Other studies also did not report on how to require parents to get more involved their child's academic growth. It is possible that 15 days, although an extension of the school year, is not long enough to make a significant difference. Had this school district extended the year by 30 or more days instead and received those extra days prior to testing during that school year, the results might have been entirely different.

Recommendations for Future Research

Since the experimental schools definitely received a total of 30 days more between the two testings, it appears that time alone was not the missing element. It is very easy to say that with more time and more money things will improve. However, that did not prove to be true in this study. A closer look at what elements might be missing and how each element could be provided is necessary. Some possible future studies in this area could include the following:

1. Research that recognizes the importance of focusing on improving the achievement level of reduced price lunch students, and the methods that work best with those students, may prove insightful to schools that are hoping to increase student achievement levels. The results of this study suggested that the reduced price lunch students may be a group that should be targeted as having unusual growth potential in academic achievement;
2. Replication of this study over an extended time frame (e.g., five years) to see whether the 195 day extended year Break-the-Mold Program results in long range improvement in student achievement;
3. Research that compares the student achievement in schools with varying extended lengths of the school year might provide insight into how much the school year should be extended to gain improved student achievement;
4. Research that addresses whether requiring parents to attend training sessions on how to help their child improve in school and how to help with homework affects student achievement would add to the current knowledge base;
5. Research to compare the effects on group achievement when controlling for variables such as teacher training, the extent of the parent involvement with the school, and teacher, and monitoring of homework completion.

APPENDIX A

HOME-SCHOOL COMMITMENT

School-Home Commitment

Parent of ________________________________ **Grade:** _______ **Date:** __________

Principal's Commitments:

1) Provide a school of which you can be proud to send your child
2) Hire the most capable employees to ensure success
3) Listen to your concerns/input
4) Stand for only the highest of expectations
5) Be equally fair and consistent to all children
6) Join PTA and attend its functions regularly
7) Keep students first in every decision I make

Signed ________________________
Principal

Teacher's Commitments:

1) Meet your child's emotional/academic needs so that your child is successful
2) Provide a caring, supportive learning environment
3) Be equally fair to all children
4) Visit you at least once this year
5) Hold at least two person to person conferences with you this year
6) Uphold the highest expectations for your child
7) Welcome you into my classroom at any time to become a participant in your child's education
8) Fully support PTA and its functions

Signed ________________________
Teacher

Home Commitments:

1) Have my child to school on time
2) Sign my child's homework
3) Visit my child's classroom
4) Conference with my child's teacher at least twice this year
5) Participate in at least one field trip as a chaperone or attend at least one program
6) Welcome my child's teacher for conferences
7) Promote nonviolence as a way of life
8) Limit what my child watches on TV
9) Allow my child to have proper rest at night
10) Read to my child or listen to my child read at least twice a week
11) Join PTA(S3) and attend at least one PTA event each term
12) Check for any home/school communications and homework daily

Signed ________________________

Student's Commitments:

1) Show up on time
2) Be prepared
3) Do assignments
4) Treat all people including myself with respect
5) Try my hardest and do my best at all times and never give up
6) Be cooperative and behave appropriately

Signed ________________________
Student

APPENDIX B

TABLES COMPARING SCHOOLS

Table B-1

Range of Percentage of Faculty Holding Various Degrees from 1994-1998

School	Bachelor	Masters	Specialist	Doctorate
A	60.4 - 67.5	23.5 - 39.3	0.0 - 1.9	0.0 - 0.0
B	41.2 - 69.7	30.3 - 58.8	0.0 - 0.0	0.0 - 3.1
Y	52.1 - 84.6	13.5 - 41.7	1.9 - 6.3	0.0 - 0.0
Z	58.3 - 84.8	9.1 - 36.1	1.6 - 5.6	0.0 - 1.5

Table B-2

Range of Percentages of Years of Experience for Faculty from 1994-1998

School	0 - 3 years	4 - 9 years	10+ years	Mean # of Teachers
A	19.6 - 35.7	10.7 - 18.9	50.9 - 66.1	55.0
B	20.6 - 32.3	12.9 - 15.6	54.8 - 64.7	32.3
Y	8.3 - 26.0	14.6 - 27.7	55.3 - 77.1	48.3
Z	20.6 - 22.2	22.2 - 30.6	48.4 - 55.6	53.7

Table B-3

Percent of Staff Turnover From the Prior Year

Year	School A	School B	School Y	School Z
1994-95	13.00%	27.30%	12.50%	10.30%
1995-96	42.90%	61.80%	35.40%	11.10%

Table B-4

Principals and Their Experience at Specific Schools

School A

	Degree	years as an assistant principal	prior years as a principal	years as a principal at School A	Years
Principal 3	Masters		2.0	1.0	1997-98
Principal 2	Doctorate	2.0	10.5	2.5	Feb. 1995-97
Principal 1	Masters	5.0	0.0	1.5	1993-Feb. 95

School B

	Degree	years as an assistant principal	prior years as a principal	years as a principal at School B	Years
Principal 3	Masters	1.0	7.0	1.0	1997-98
Principal 2	Masters	4.0	0.0	2.5	Feb. 1995-97
Principal 1	Masters	*	*	*	? - 1995

School Y

	Degree	years as an assistant principal	prior years as a principal	years as a principal at School Y	Years
Principal 3	Masters	5.0	3.0	1.5	Jan. 1997 - 98
Principal 2	Doctorate	*	*	1.5	1995 - Jan. 97
Principal 1	Masters	3.0	9.0	3.0	1992 -95

School Z

	Degree	years as an assistant principal	prior years as a principal	years as a principal at School Z	Years
Principal 2	Masters	5.0	1.0	3.0	1995-98
Principal 1	Specialist	1.0	0.0	6.0	1989-95

Note. *School B's principal 1 and School Y's principal 2 were the same person. That administrator has since been removed from administration and no longer has available records held at the county office.

Table B-5

Range of National Percentile Scores for 1992 Through 1995

	Reading	Median Reading Score	Mathematics	Median Mathematics Score
School A	24 - 26	24.5	28 - 38	31.0
School B	26 - 63	37.5	34 - 76	50.5
School Y	25 - 33	26.5	30 - 40	37.0
School Z	18 - 30	26.0	24 - 36	34.0

Table B-6

Profile of Student Body During the 1995 - 1996 School Year

Demographic Characteristics	School A	School B	School Y	School Z
Percent of Free/Reduced Lunch	61.1	77.6	76.2	44.2
Percent of 2nd Grade Free/Reduced Lunch	68.5	81.5	70.1	76.2
Percent of Average Daily Attendance	92.2	94.4	94.0	91.8
Percent of Mobility Rate	39.1	34.0	42.4	48.5

Table B-7

Number of Males/Females in Each Ethnic Group

	School A		School B		School Y		School Z	
Race/Ethnic Classification	Male	Female	Male	Female	Male	Female	Male	Female
White	375	362	71	52	231	208	253	283
Black	131	188	180	165	353	327	378	380
Hispanic	22	33	10	12	23	22	104	98
Asian	4	0	2	3	2	0	6	8
Am Indian	0	3	2	0	2	0	3	1
Total #	532	586	265	232	611	557	744	770

Table B-8

Percent of Students in Each Ethnic Group for 1995-1996

Race/Ethnic Classification	School A	School B	School Y	School Z
White	65.7	24.7	37.5	35.4
Black	28.5	69.4	58.0	50.0
Hispanic	4.9	4.4	3.8	13.3
Asian	0.4	1.0	0.2	0.9
Am Indian	0.3	0.4	0.2	0.3

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BIOGRAPHICAL SKETCH

Kristen Kay Jarand Springfield was born in Decatur, Illinois, in 1968, and moved to Florida in 1971. On March 18, 1995, she married Wendell Lawton Springfield, Jr. They had their first daughter, Merebeth Ellen, on September 11, 1997.

Kristen graduated from Lake Mary High School on June 6, 1986, and from Seminole Community College on August 5, 1986. She then attended Florida State University and graduated in 1989, with a Bachelor of Science in mathematics education with certification in all subjects for first through sixth grade and in mathematics for seventh through twelfth grade. Kristen earned her Master of Education in secondary mathematics from the University of Central Florida in 1991. She started her doctorate at the University of Florida in 1994.

From 1989 through 1995, Kristen taught high school mathematics. In 1995, she transferred to teach all subjects at an elementary school at the fifth-grade level. She stayed at the elementary level until 1998. Currently, she teaches middle school mathematics at a mathematics, science, and technology magnet school.

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Education.

James Doud

James Doud, Chair
Professor, Educational Leadership

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Education.

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I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Education.

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This dissertation was submitted to the Graduate Faculty of the College of Education and to the Graduate School and was accepted as partial fulfillment of the requirements for the degree of Doctor of Education.

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